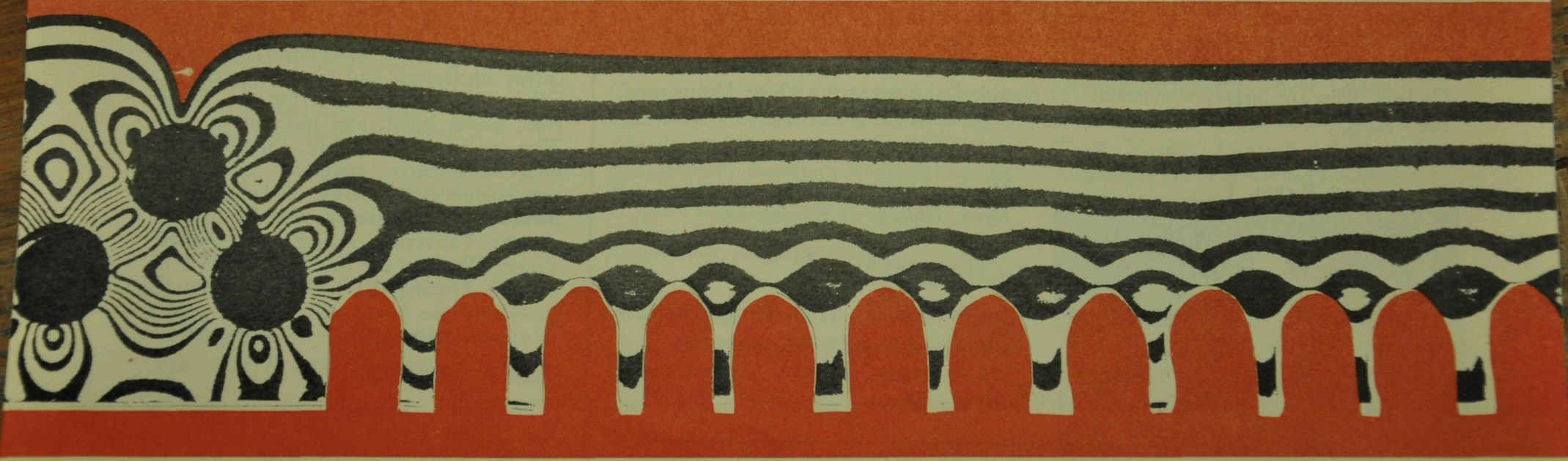
ENGINEERING OPEN · HOUSE



UNIVERSITY OF ILLINOIS IIII
MARCH 10-11, 1961 • URBANA

Greetings to Open House Visitors

from Students and Faculty

You are especially welcome guests, both because of the interest you are taking in your state university, and because the nation needs technically educated as well as technically aware citizens. Thus we are happy to have you visit us whether you seek acquaintance with engineering as a possible field of study and career, or whether you wish to find out the responsibilities of an engineer as a professional man.

For all of you we will try to make available insights into engineering as an undergraduate study, and an increasingly challenging field for graduate work as well. We will try to display courses and textbooks, laboratories, student activities, and at least a partial reflection of our broad research interests. The students of the College, who are largely responsible for planning and preparing Open House, and the Faculty, who support and advise them, join in inviting you and in welcoming your arrival.

JOHN RAFFL
Student General Chairman

W. L. EVERITT
Dean, College of Engineering

STUDENT VICE-CHAIRMEN

Tom Metzger—Coordination
Robert C. Miller—Publicity
Robert Yackel—Art and Design
Joe Wdowiarz—High School Publicity
Joe Rohaly—Secretary-Treasurer
Jim Murphy—Physical Arrangements
Prof. E. C. McClintock—*Adviser*

The Cover: The photoelastic model of a steel beam shows stress concentration. This is accomplished with monochromatic, polarized light passed through a plastic model of the beam, which is loaded as the actual beam will be when it is in use.

INFORMATION

Engineering Open House Headquarters are located in Room 57 of the Electrical Engineering Building and in Room 50 of the Ceramic Engineering Building. Information concerning Open House, the College of Engineering, and the University will be available at these locations. Open House hours Friday are 10 A.M. to 9 P.M., Saturday 9 to 5.

GUIDED BUS TOURS

To Betatron, Power Plant, and Illinois Central Railroad exhibits. Free buses leave every half hour from the corner of Burrill and Green Streets, at Civil Engineering Hall, for the Betatron, power plant, and railroad exhibit. The railroad equipment, including a diesel locomotive, standard coach, dynamometer car, caboose, and road bed maintenance machinery, will be spotted on the University siding near Abbott Power Plant at the Stadium Drive Underpass. During the trips, Tau Beta Pi guides on the buses will indicate points of campus interest.

FOOD SERVICE

The cafeteria located in the basement of the Illini Union serves lunch from 11:30 A.M. to 1:15 P.M., and the fountain is open from 2:00 to 4:30 P.M. There are also many restaurants in the campus business district.

Aeronautical Engineering

Aero Labs B and A

ENGINES

Ram Jet; Ground Effect Vehicles; Rocket; Turboprop; Turbojet; Pulse-jet Engine; Tesla Turbine; Peripheral Compressor.

TEST EQUIPMENT

Shock Tube; Photoelastic Structure Test; Smoke Tunnel; Aero-Structures Testing; Subsonic Wind Tunnel and Flutter Testing; Plasma-Jet Generator.

MISCELLANEOUS

Orbit and Trajectories Exhibit; Flight Regime Problems, Analog Computer; Movies—missiles and aircraft.

Agricultural Engineering

Display on Burrill St.

FARM STRUCTURES

Joint and Wall Construction Procedures.

POWER and MACHINERY

Tractors; Tractor Testing; Hay-Making.

SOIL and WATER

Drainage Tile; Surveying Equipment; Conservation Control Structures.

ELECTRICITY and PROCESSING

Automatic Feed Handling; Electric Motors; Environmental Control.

Ceramic Engineering

Ceramics Bldg.

PREPARATION of CERAMIC BODIES

Simson Mixer—dry mixing and pressing. Extruding Machine.

KILNS and SMELTERS

Kiln with Optical Pyrometer; Crucible and Rotary Enamel Smelters.

PRODUCTS of CERAMIC TECHNOLOGY

Floor and Wall Tile; Refractory Brick; Ceramic Nose Cone Components; Sewer Pipe; Electrical Ceramic Components; Abrasives; Vitreous and Semi-Vitreous Dinnerware; Porcelain Enamels; Glass. Movies—Ceramic Production.

Chemical Engineering

East Chem. Bldg.

EQUIPMENT

Glass Distillation Unit; Rotary Filter; Hilsch Tube — defies thermodynamic laws; Radio Chemistry—radiation detection.

MISCELLANEOUS

Wave Formation; Chem Pop free refreshment; Chem Magic Show—presented on the hour.

Civil Engineering

Civil Engr. Bldg.

CONSTRUCTION

Buildings; Highways; Structures Design; Surveying; Photogrammetry; Railways.

HYDRAULICS and SANITATION

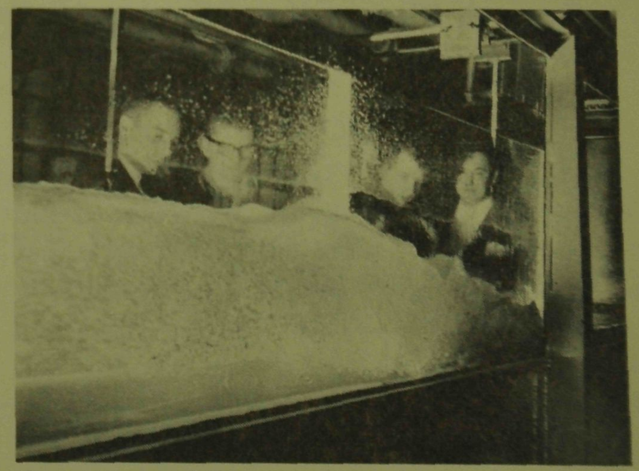
Water Supply, Treatment; Flood Control; Sewage Treatment and Disposal.

SOIL MECHANICS

Retaining Wall Failure Demonstration; Foundation Failures Demonstration; Ground Settlement Under Loads.

TRAFFIC

Traffic Signals; Radar Speed Detection; Automatic Volume-Density Computer.



Open House visitors examine the large volume of turbulent flow created from the small but high-speed volume of laminar flow seen to the right in the fluid mechanics laboratory.

Electrical Engineering

Electrical Engr. Bldg.

COMMUNICATION

UHF and Microwave Transmission; WPGU—Student Radio Station; WILL—University Television Station; Stereophonic Sound Exhibit; Commercial Radio Transmitter.

ELECTRONICS

Lie Detector; Ghost Writer; Kissometer; Oscilloscope Display; Electronic Whale; Talking Dog; Sonar; State Police Radar; Electronically Controlled Ball; Electronic Humidity Control.

MAGNETISM

Strength Tester; Repelling Iron Balls; Electromagnetic Motor and Cannon.

MISCELLANEOUS

Van de Graaff Generator; Jacob's Ladder; One-Wire Light Control; Donner Computer; Data-Fax; Tesla Coil; Color Organ; Hand-Eye Coordination Tester.

Research installotion for study of machine-tool wear and cutting efficiencies, a basic mechanical engineering investigation of great importance to Illinois industry and to national productivity.

General Engineering

Transportation Bldg.

ENGINEERING GRAPHICS

Student Demonstrations of Problem-Solving; Graphic Aids and Illustrating Methods; Air-brushing; New Drawing Distribution System.

SPECIAL TOPICS

Engineering History; Engineering Law; Hospitality Room; Guidance Movies.

Industrial Engineering

135 and 235 M. E. Bldg.

SAFETY

Machine Guards; Firefighting Equipment; Fume Control; Dust Explosions.

WORK-STUDY & ANALYSIS

Method - Time Analysis; Plant Layout; Linear Programming and Statistics; Materials Handling Equipment.

TOOL ENGINEERING

Tooling; Dies; Production Tools.

Mechanical Engineering

Mechanical Engr. Bldg.

METAL WORKING

Heat Treatment; Metal Cutting; Welding; Metal Casting—at Foundry Lab (Springfield Avenue).

FIELDS OF INTEREST

Machine Design; Heating and Ventilating; Physical Environment Laboratory; Internal Combustion Engines.

INFORMATION

Pi Tau Sigma—M. E. Honorary Society; American Society of Mechanical Engineers Student Branch.

Metallurgical Engineering

Metallurgy Lab.

PROCESSES

Heat Treatment of Steel; Welding; Production Steps in Steelmaking; Rolling Mill Demonstration.

METAL STRUCTURE

Phase Changes in Steel; Crystal Models; Metals under the Microscope; Movement of Crystal Imperfections.

MISCELLANEOUS

Powder Metallurgy; Corrosion in Action; Thermocouples; Display of Metals; Zinco; Photography in Metallurgy.

Mining Engineering

Mining Lab.

MINE EQUIPMENT

Automatic Hoisting; Mine Ventilation; Slusher Loading.

MINERAL PROCESSING

Cones; Jigs; Tables.

PROSPECTING

Geophysical; Diamond Drill.

Petroleum Engineering

Mining Lab.

SOURCES and EQUIPMENT

Model Oil Reservoir; Model Drilling Rig; Oil Well Surveying Truck and Equipment; Gas Drive; Waterflooding.

Physics

Physics Lab.

LOW TEMPERATURE PHYSICS

Liquified Gases, 200° Below Zero.

NUCLEAR PHYSICS

Geiger Counters; Radioactivity; Spark Chamber for Cosmic Rays.

ELECTRICITY and MAGNETISM

Measuring the Speed of Light Electronically; Movies—room 119 Phys. Lab.; Schedule will be posted.

OPTICS

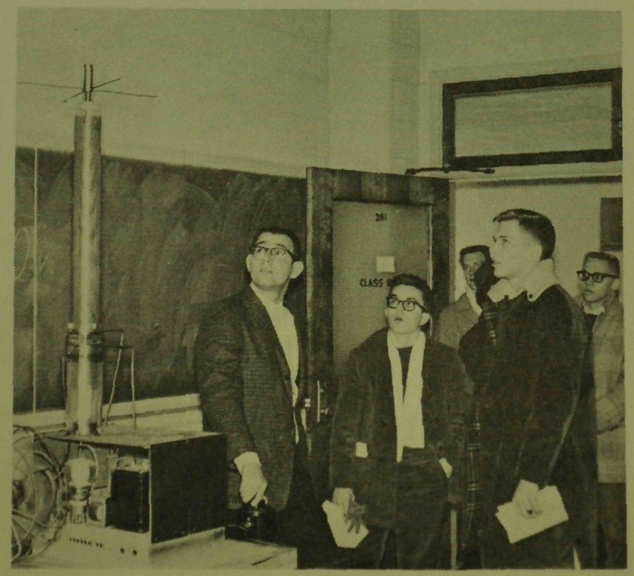
Spectra from Gaseous Discharge; Land Two-Color Photography.

CYCLOTRON Nuclear Radiation Lab.

Electromagnetic and Electrostatic means used to impart high speeds to electrified particles. The particles are used to bombard atomic nuclei, producing transmutations and artificial radioactivity.

BETATRON Physics Research Lab.

Electromagnetic acceleration of electrons to form a narrow beam of Beta rays, then used to generate high-voltage X-rays and to transmute elements.



Demonstration of a rotary device powered by emission of electrically-charged ions at very high voltages. Such devices may in the future be of major use for propelling missiles or other vehicles in space.

Theoretical and Applied Mechanics

Talbot Lab.

STRESSES and STRAINS

Three-Million-Pound Test Machine—Concrete cylinders will be compressed Friday: 11 a.m. and 2, 3, 4, 5, and 7, 8, 9 p.m. (on the hour); Saturday: 10, 11 a.m. and 1, 2, 3, 4 p.m. (on the hour); Photoelastic Stress Measurement; Experimental Stress Measurement; Materials Testing.

HYDRAULICS

Fluid Mechanics; Hydraulic Machinery and applications of hydraulic forces.

MISCELLANEOUS

Metals and Fatigue; Vibration Models; Engineering Mechanics Curriculum.

Digital Computer Laboratory

The Laboratory consists of the Illiac digital computer, which was built at the University, and an I.B.M. 650. The Laboratory also has under construction a new computor 50-100 times as fast as Illiac. The Illiac will be explained and demonstrated every hour on the hour. Laboratory personnel will also be on duty continuously to answer questions.

Nuclear Engineering

Mechanical Engr. Lab.

SUBCRITICAL ASSEMBLIES

Three units, two uranium-graphite and one light-water-uranium, will be on display, with appropriate neutron counting equipment in operation.

BOILING WATER LOOP

Designed to simulate the heat-transfer conditions of nuclear reactors, this high-capacity loop will be explained for those interested.

NUCLEAR METALLURGY

Facilities for uranium processing and fuel-element fabrication. (Explained for those with special interests.)

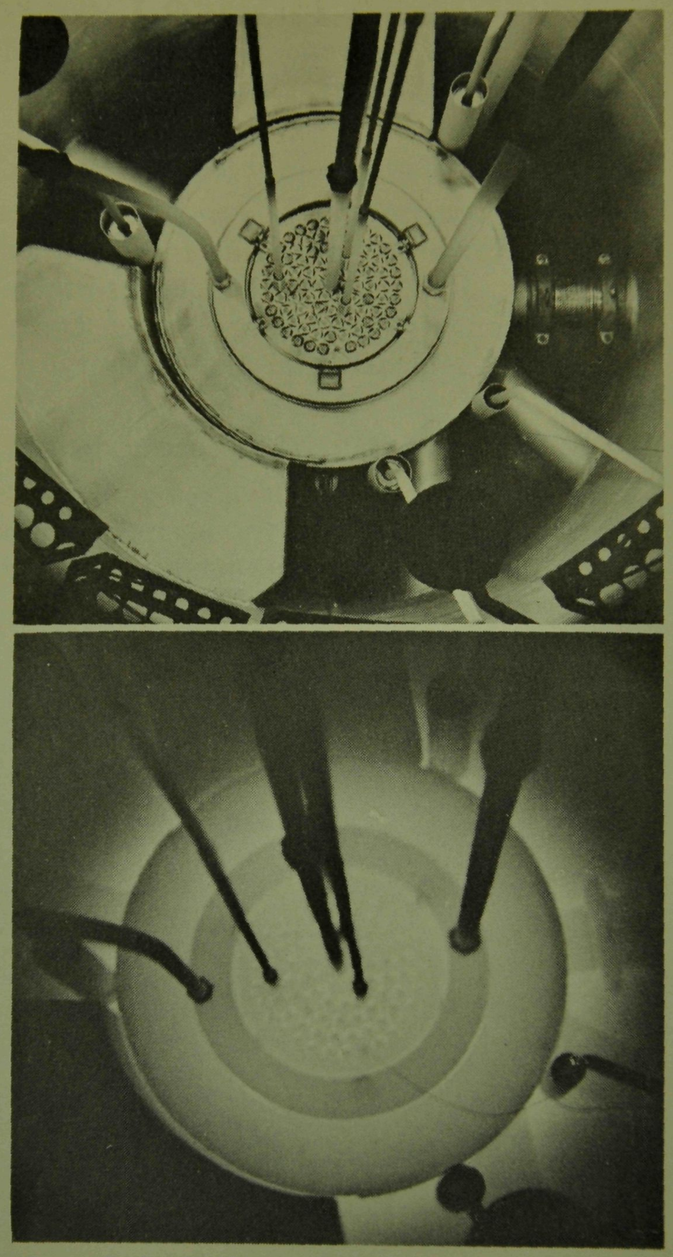
THE ILLINOIS TRIGA

Nuclear Reactor Lab.

This 100-Kilowatt reactor uses 4.5 pounds of U-235 as fuel. A "blue glow" caused by the nuclear radiation can be viewed safely from the top of the reactor while it is operating.

DRILL MEET

Open House visitors are invited to attend the Pershing Rifles Invitational Drill Meet of nearly 100 teams Friday afternoon and all day Saturday. Buses will stop at the Armory, south center door on Gregory Drive.



Core of the TRIGA nuclear reactor, viewed through the protective water shield. Above, the reactor is cold, showing the central group of fuel and moderator units; below, at full power, it is lighted by the blue glow of Cerenkov radiation.

R.O.T.C. Units

AIR FORCE — E. E. Bldg

Jet Engine Cutaway Model; Scale Models of Missiles; Pilot's Personal Equipment.

ARMY CORPS OF ENGINEERS — 153 M. E. B.

Fixed and Floating Bridge Models; Detection Equipment for Mine Warefare; Corps of Engineers Construction Projects.

ARMY SIGNAL CORPS — 153 M.E.B.

Telephone and Teletype Communications; A.M. Radio—in operation.

ARMY ORDNANCE — 143b M. E. B.

Ammunition—shaped charge, plastic antitank mine, tungsten sabot round, high explosive plastic round; Powder Metallurgy Display; T.N.T. Plant Layout.

NAVAL R.O.T.C. — 152-154 M.E.B.

AVIATION and ASTRO SPACE

Carrier Warfare; Air-to-Air Missiles; Control Systems; Radio Telescope.

SUBMARINE and SURFACE FORCES

Nuclear Submarines; Antisubmarine Warfare; Surface-to-Air Missiles.

Textbook Exhibit

A display of textbooks used in College of Engineering courses has been prepared by Tau Beta Pi, all-engineering scholastic honorary fraternity. Questions about the College, curricula, and student preparation will also be answered at the Tau Beta Pi counseling room in Electrical Engr. Bldg.

Scholarship Exhibit

A display of the many scholarships available to students of the University of Illinois will be presented by Sigma Tau, all-engineering scholastic honorary fraternity. Questions concerning requirements for eligibility and procedures for application will be answered at the Sigma Tau display in the Electrical Engineering Building.

Mathematics

Although it is a science of its own, mathematics is very closely related and essential to engineering. Sigma Tau fraternity will present a display of fields of mathematics along with practical applications to engineering in the Electrical Engineering Building.

St. Pat's Ball

Held on Saturday, March 11 from 9:00 p.m. to 1 a.m. in the Illini Union Ballroom.

Open House Coordinating Committee

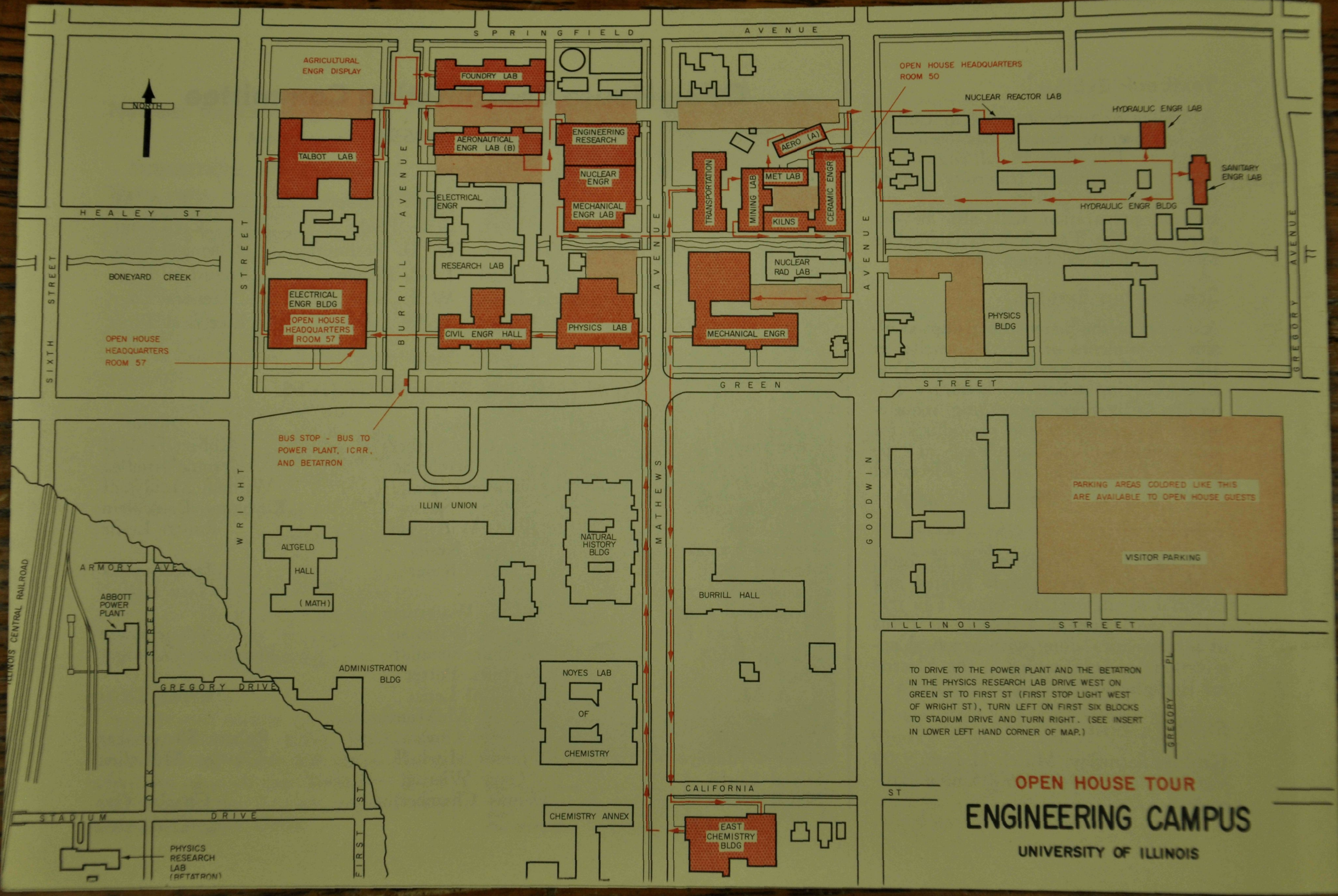
FACULTY ADVISERS

G. R. Eadie, Chairman.....Mining Eng.

R. J. Beals.....Ceramic Engr.
E. J. Brown.....Mechanical Engr.
W. H. Bruckner....Metallurgical Engr.
J. H. Goldberg.....Aeronautical Engr.
D. R. Hunt.....Agricultural Engr.
L. J. Koester.....Physics
J. W. Murdock.....T. A. M.
S. L. Paul.....Civil Engr.
D. D. Perlmutter.....Chemical Engr.
L. C. Pigage.....Industrial Engr.
W. L. Shick.....General Engr.
A. W. Swago.....Electrical Engr.

DEPARTMENTAL REPRESENTATIVES

Dept.	*Senior*	*Junior*
Aeronautical Engr.	George Carruthers	Robert Fennell
Agricultural Engr.	Rollin Strohman	Jerome Bradley
Ceramic Engr.	William Long	William Muhlstadt
Chemical Engr.	George Nasses	Raymond Roeschlein
Civil Engr.	E. R. Wilkinson	Robert Leslie
Electrical Engr.	Oren Kesler	
General Engr.	James Bader	Jack Punzak
Industrial Engr.		Gary Hough
Mechanical Engr.	W. F. Waterman	
Metallurgical Engr.	Robert Wittman	Vonne Linse
Mining Engr.	Arthur Schmidt	Benjamin Caplinger
Physics	James Potter	
T. A. M.	Virgil Lenzi	Vance Lenzi
Air Force	Richard McManus	
Army Engrs.	James Govaia	Robert Shewmaker
Army Ordnance	James Mitchell	Charles McLellen
Signal Corps	Gary Wieting	
Naval R.O.T.C.	Dennis Chamberlin	Charles Orr


SPRINGFIELD AVENUE
NORTH
HEALEY ST
SIXTH STREET
BONEYARD CREEK
OPEN HOUSE HEADQUARTERS ROOM 57
AGRICULTURAL ENGR DISPLAY
TALBOT LAB
ELECTRICAL ENGR BLDG
OPEN HOUSE HEADQUARTERS ROOM 57
WRIGHT STREET
BURRILL AVENUE
FOUNDRY LAB
AERONAUTICAL ENGR LAB (B)
ELECTRICAL ENGR
RESEARCH LAB
CIVIL ENGR HALL
ENGINEERING RESEARCH
NUCLEAR ENGR
MECHANICAL ENGR LAB
PHYSICS LAB
MATHEWS AVENUE
TRANSPORTATION
AERO (A)
MINING LAB
MET LAB
KILNS
CERAMIC ENGR
NUCLEAR RAD LAB
MECHANICAL ENGR
GOODWIN AVENUE
OPEN HOUSE HEADQUARTERS ROOM 50
NUCLEAR REACTOR LAB
HYDRAULIC ENGR LAB
SANITARY ENGR LAB
HYDRAULIC ENGR BLDG
PHYSICS BLDG
GREGORY AVENUE
GREEN STREET
BUS STOP - BUS TO POWER PLANT, ICRR, AND BETATRON
ILLINI UNION
ALTGELD HALL (MATH)
NATURAL HISTORY BLDG
BURRILL HALL
ILLINOIS CENTRAL RAILROAD
ARMORY AVE
ABBOTT POWER PLANT
OAK STREET
GREGORY DRIVE
ADMINISTRATION BLDG
NOYES LAB OF CHEMISTRY
CHEMISTRY ANNEX
CALIFORNIA
EAST CHEMISTRY BLDG
STADIUM DRIVE
FIRST ST
PHYSICS RESEARCH LAB (BETATRON)
PARKING AREAS COLORED LIKE THIS ARE AVAILABLE TO OPEN HOUSE GUESTS
VISITOR PARKING
ILLINOIS STREET
GREGORY PL
TO DRIVE TO THE POWER PLANT AND THE BETATRON IN THE PHYSICS RESEARCH LAB DRIVE WEST ON GREEN ST TO FIRST ST (FIRST STOP LIGHT WEST OF WRIGHT ST), TURN LEFT ON FIRST SIX BLOCKS TO STADIUM DRIVE AND TURN RIGHT. (SEE INSERT IN LOWER LEFT HAND CORNER OF MAP.)
OPEN HOUSE TOUR
ENGINEERING CAMPUS
UNIVERSITY OF ILLINOIS